## REMARKS

Applicants respectfully traverse the rejections and request reconsideration. The Applicants would like to thank the Examiner for indicating that claim 23 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Claim Rejections under 35 USC § 103(a)**

Claims 1-2, 14-22 and 24-40 are rejected under 35 U.S.C. § 103(a), based on U.S. Patent No. 6,597,363 (Duluk) in view of U.S. Patent No. 5,446,836 (Lentz).

The Office Action appears to misstate the claim language as the Office Action improperly omits claim language in an effort to obviate the claims. The Office Action asserts that Duluk does not specifically disclose "generating coordinate data representing an initial rasterization starting point estimate." Applicants, among other things, claim "generating an initial rasterization starting point estimate when the region bits indicate that at least one of the sorted vertex data lies within the current tile being rendered and discarding the sorted vertex data of primitives that lie outside the boundary of the current tile being rendered." As noted above, Applicants claim, among other things, (1) an initial rasterization starting point estimate within the current tile being rendered, and (2) discarding the sorted vertex data of primitives that lie outside the boundary of the current tile being rendered. However, Duluk explicitly describes a starting point that lies outside rather than within the tile (Duluk at col. 76, lines 34–36, 45–46, 50–51; Fig. 45). Further, Lentz explicitly teaches starting the rasterization of a triangle at a point outside of the triangle (as also does Duluk), as illustrated by the "X" shown in Fig. 9.

Duluk, as cited, is directed to clipping segments of primitives that lie wholly outside the tile. (Duluk col. 76, lines 25–28.) Nevertheless, the Office Action on page 3, line 1, equates the claimed "initial rasterization starting point estimate" with the starting point cited in Duluk at col. 76, lines 25–36 and in Fig. 45. Duluk, however, starts clipping a line at an arbitrary point outside the tile boundary, and ends clipping at a start point (i.e., x0 and y0 are shown outside the tile boundary in Fig. 45). Further, rather than teach "discarding the sorted vertex data of primitives that lie outside the boundary of the current tile being rendered," Duluk instead teaches clipping only a portion of a line outside of the tile boundary resulting in a portion of the primitive outside of the tile boundary. (Duluk Fig. 45, col. 76, lines 28–30.) For example, Duluk explicitly describes a starting point that lies outside of, rather than within, the tile (Duluk at col. 76, lines 34–36, 45–46, 50–51; Fig. 45).

Lentz, as cited, is directed to starting the rasterization of a triangle at a point outside of the triangle (as also does Duluk), as explicitly illustrated by the "X" shown in Fig. 9, rather than (1) an initial rasterization starting point estimate within the current tile being rendered and (2) discarding the sorted vertex data of primitives that lie outside the boundary of the current tile being rendered. (Lentz, Col. 5 lines 33-35, Col. 3, lines 35–45.) Nevertheless, according to the Advisory Action, Lenz discloses a starting point that lies inside of the tile in Fig. 6, as described in the background of the invention. However, Lentz instead teaches that the tradeoff of the algorithm shown in Fig. 6 of background of the invention results in an excessive number of calculations because the interpolator states must be saved. (Lentz, Col. 3, lines 35–45.) Lentz instead teaches starting the rasterization of a triangle at a point outside of the triangle, as illustrated by the "X" shown in Fig. 9, and therefore teaches away from the algorithm shown in Fig. 6, as well as the other algorithms discussed in the background of the invention, because of the resulting excessive number of calculations. (Lentz, Col. 4, lines 4–19.) Lentz instead

specifically teaches a method for rendering triangles that reduces the number of calculations required, including those algorithms taught in the background of the invention, such as the algorithm taught in Fig. 6, as cited.

In contrast, claim 1 recites, among other things, (1) generating an initial rasterization starting point estimate when the sorted vertex data lies within the tile boundary, and (2) discarding the sorted vertex data that lie outside of the tile boundary. Rather than teach an initial rasterization starting point estimate within the current tile being rendered and "discarding the sorted vertex data that lie outside of the tile boundary," Lentz explicitly teaches starting the rasterization of a triangle at a point outside of the triangle (as also does Duluk), as illustrated by the "X" shown in Fig. 9. Since Lentz rasterizes points outside of the tile boundary, Lentz does not discard the sorted vertex data that lie outside of the tile boundary. Therefore, the assertion in the Office Action that Lenz discloses the starting point that lies inside of the tile is contradicted by the explicit teachings of Lentz. Therefore, Lentz fails to make up for the shortcomings of Duluk. As a result, the Office Action has not shown where the combination of Lentz and Duluk teaches, among other things, (1) generating coordinate data representing an initial rasterization starting point estimate when the region bits indicate that at least one of the sorted vertex data lies within the current tile being rendered, and (2) discarding the sorted vertex data of primitives that lie outside the boundary of the current tile being rendered.

As understood, the combination of Duluk and Lentz would teach preserving rather than discarding a starting point outside of the tile boundary (as taught in Duluk), while traversing the bounding box left to right (after walking "off" the edge of a triangle, top to bottom scanning process, beginning with the point outside of the triangle, as taught in Lentz). (Lentz col. 3, lines 43–46.) Therefore, the combination of Duluk and Lentz teaches 1) a starting point that lies outside of the tile boundary rather than within the tile boundary, and 2) rasterizing data that lies

outside of the tile boundary rather than discard the sorted vertex data of primitives that lie outside the tile boundary. For at least these reasons, even if combined, the combination of Duluk and Lentz fails to teach "generating coordinate data representing an initial rasterization starting point estimate when the region bits indicate that at least one of the sorted vertex data lies within the current tile being rendered and discarding the sorted vertex data of primitive that lie outside of the boundary of the current tile being rendered." (Claim 1.) As a result, the combination of Duluk and Lentz fails to teach each and every element as arranged in claims 1, 14 and 27. Therefore, the Office Action fails to establish a *prima facie* case of obviousness. Reconsideration and withdrawal of the rejection is respectfully requested.

Claim 28 further recites, among other things, 1) determining whether the sorted primitives are positioned within a current tile to be transmitted to a rasterizer, and 2) determining an initial rasterization point within the sorted primitive. Applicants further repeat the above remarks, including those showing that Duluk and Lentz teach 1) a starting point that lies outside of the tile boundary, and 2) rasterizing data that lies outside of the tile boundary. For example, Duluk and Lentz show the starting point lies outside of the tiled boundary, rather than "determining whether the sorted primitives are positioned within a current tile to be transmitted to a rasterizer." Duluk and Lentz also show the vertex points lying outside of the tiled boundary, rather than "determining whether the sorted primitives are positioned within a current tile to be transmitted to a rasterizer." For at least these reasons, the combination of Duluk and Lentz fails to teach each and every element, as arranged in claim 28. As a result, the Office Action fails to establish a *prima facie* case of obviousness. Reconsideration and withdrawal of the rejection is respectfully requested.

Dependent Claims 2, 15–26, and 29–40

Applicant further submits that these dependent claims are also allowable in light of the presence of novel and nonobvious elements contained in these claims that are not otherwise present in the independent claims. Applicant also submits that these claims depend from the base claim and the intermediate claims, and as dependent therefrom. However, these claims are allowable for at least the reasons the independent claims are allowable.

Applicant notes that a showing where the references teach each and every element for claims 31–38 is not provided in the Office Action. As such, Applicants request allowance of these claims for at least the reasons provided above.

Support for new claims 41 and 42 may be found at least based on claims 28, 25, 36 and 40. As such, Applicants request allowance of these claims for at least the reasons provided above.

## CONCLUSION

For the foregoing reasons, withdrawal of the rejections and allowance of the claims is respectfully requested. If there are any questions or comments regarding this response, the Examiner is encouraged to contact the undersigned at 312-609-7970.

Respectfully submitted,

By: _____
Themi Anagnos
Reg. No. 47,388

Dated: March 4, 2005

Vedder, Price, Kaufman & Kammholz, P.C.
222 North LaSalle Street
Chicago, Illinois 60601
Telephone: (312) 609-7970
Facsimile: (312) 609-5005